

Detecting *Pneumocystis jirovecii* by Real-time PCR Assay

Clinical Indication and Relevance

Pneumocystis pneumonia (PCP, formerly known as *Pneumocystis carinii* pneumonia) is the most common opportunistic infection in immunocompromised patients. Detecting *Pneumocystis jirovecii*, which causes infections in humans, in respiratory specimens by real-time PCR assay is used to assist in the diagnosis of PCP.

Methodology

The assay is performed on patients' respiratory specimens. DNA is isolated from patient samples and amplified with specific primers in the presence of a TaqMan probe targeting the *Pneumocystis jirovecii* *kex-1* gene region, and the presence of *Pneumocystis jirovecii* is detected using real-time PCR. Results are reported as positive or negative for *Pneumocystis jirovecii*.

Sensitivity

This assay can detect *Pneumocystis jirovecii* to a sensitivity of 10 copies per PCR reaction.

Turn-around Time

Five to seven working days

Sample Requirements

Collect

Respiratory specimen: bronchoalveolar lavage (BAL), bronchial wash, or sputum.
Transfer available respiratory specimen to a **sterile container** (minimum: 0.5 mL).

Transport

2-8°C (wet ice or cold packs). Do not freeze.

Stability

N/A

Unacceptable Samples

Peripheral blood, bone marrow, serum or plasma, CSF

CPT Code(s)

87798: Amplified probe technique, each organism

References

1. Bandt D et al. Transplant infectious disease. 9:196, 2007
2. Mühlethaler K et al. European respiratory journal. 39:971, 2012
3. Reid AB et al. Current opinion in infectious diseases. 24:534, 2011
4. Rohner P et al. Infection. 37:261, 2009